



COJC

PATENT

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patentee: GEOFFREY HORNE et al.

Issue Date: August 17, 2004

Patent No.: 6,777,164 B2

Appln. No.: 09/828,075

Filing Date: April 6, 2001

Title: LITHOGRAPHIC PRINTING FORMS

Examiner: LEE, Sin J.

Group Art Unit: 1752

Docket No. 58575-278027

Mail Stop CERTIFICATE OF CORRECTION BRANCH  
Commissioner for Patents  
P. O. Box 1450  
Alexandria, VA 22313-1450

I CERTIFY THAT, ON OCTOBER 11, 2004, THIS PAPER IS BEING  
DEPOSITED WITH THE U.S. POSTAL SERVICE AS FIRST CLASS  
MAIL IN AN ENVELOPE ADDRESSED TO MAIL STOP CERTIFICATE  
OF CORRECTION BRANCH, COMMISSIONER FOR PATENTS,  
P. O. BOX 1450, ALEXANDRIA, VA 22313-1450.

*Karen Hull*  
Karen Hull

**REQUEST FOR EXPEDITED ISSUANCE OF**  
**CERTIFICATE OF CORRECTION OF PATENT UNDER 37 C.F.R. § 1.322**

The enclosed Certificate of Correction (PTO/SB/44) is submitted to correct errors in this patent arising as a result of an Office mistake.

No fee is believed to be necessary. Should any fee be required, the Commissioner is authorized to charge our Deposit Account No. 06-0029 and is requested to notify us of the same.

The corrections to claims 1 and 17 referenced on PTO/SB/44 are typographical. Although Claims 1 and 17 were amended from the original submission, the portions of the claims requiring correction were never amended. Attached is a copy of the Amendment filed on April 28, 2003 referencing the amendments to claims 1 and 17. Claims 1 and 17 as amended on April 28, 2003 are the allowed claims. As shown in the April 28, 2003 Amendment, the portion of claims 1 and 17 being corrected were as originally filed and not amended.

Respectfully Submitted,

GEOFFREY HORNE et al.

Dated: October 11, 2004

By:

*Sean Mahoney*  
Sean B. Mahoney, #51,984  
FAEGRE & BENSON LLP  
2200 Wells Fargo Center  
90 South Seventh Street  
Minneapolis, MN 55402-3901  
612/766-6845

Certificate  
OCT 21 2004  
of Correction

M2:20662435.01

OCT 22 2004

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.  
(Also Form PTO-1050)

## UNITED STATES PATENT AND TRADEMARK OFFICE

## CERTIFICATE OF CORRECTION

PATENT NO : 6,777,164 *B2*

DATED : August 17, 2004

INVENTOR(S) : GEOFFREY HORNE et al.

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Claim 1, Line 66, delete the word "Arc" and replace it with -- free --

Claim 17, Line 15, delete the word "aluminum" and replace it with -- aluminum --

MAILING ADDRESS OF SENDER: Sean B. Mahoney  
FAEGRE & BENSON LLP  
2200 Wells Fargo Center  
90 South Seventh Street  
Minneapolis, MN 55402-3901  
612/766-6845

PATENT NO. 6,777,164 *B2*

No. of additional copies



OCT 22 2004



PATENT

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

<b>Applicant:</b> GEOFFREY HORNE et al.	<b>Examiner:</b> LEE, Sin J.
<b>Serial No.:</b> 09/828,075	<b>Group Art Unit:</b> 1752
<b>Filed:</b> April 6, 2001	
<b>For:</b> LITHOGRAPHIC PRINTING FORMS	<b>Docket No.</b> 58575-278027

Box No Fee Amendment  
Commissioner for Patents  
Washington, D.C. 20231

I CERTIFY THAT, ON APRIL 28, 2003, THIS PAPER IS BEING SENT VIA  
FACSIMILE TO THE COMMISSIONER FOR PATENTS, WASHINGTON,  
D.C. 20231.

*Grigor Plauk*  
Grigor Plauk

**AMENDMENT**

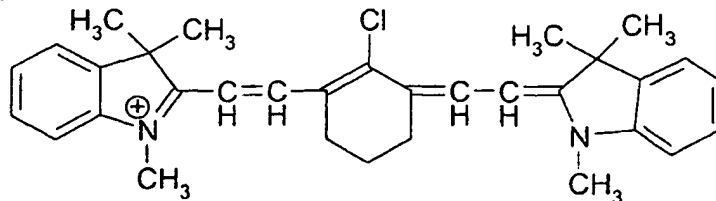
### **INTRODUCTORY COMMENTS**

This Amendment is responsive to the outstanding Office Action mailed January 28, 2003. No fee is included with this submission. However, if any fee is required for entry of this paper, the Commissioner is authorized to charge our Deposit Account 06-0029 and is requested to notify us of the same.

Please amend the application as follows:

### AMENDMENTS TO THE CLAIMS

1. (Currently amended) A lithographic printing form precursor comprising:  
an anodized aluminum support; and  
having an imagable coating on a the aluminum support, wherein the imagable  
coating comprises a polymeric substance comprising having pendent  
colorant groups; and reversible insolubilizer groups selected from  
the group consisting of -O-SO<sub>2</sub>-tolyl, -O-dansyl, -O-SO<sub>2</sub>-thienyl, -O-SO<sub>2</sub>-  
naphthyl and -O-CO-Ph and diazido functional groups;  
wherein the aluminum support ~~on which the coating is provided is~~ has been anodized but  
not subsequently ~~modified by means of a post-anodic treatment compound~~ subjected to a  
chemical treatment step, and wherein the coating does not comprise a free colorant dye.
2. (Currently amended) A precursor as claimed in claim 1, wherein the polymeric substance  
is derived from a polymer comprising hydroxyl groups, able to react with a colorant  
compound or moiety, to produce the polymeric substance having pendent colorant  
groups.
3. (Previously amended) A precursor as claimed in claim 2, wherein the polymeric  
substance is a phenolic resin selected from the group consisting of a novolac resin, a  
resole resin, a novolac/resole resin mixture and polyhydroxystyrene, and a copolymer of  
hydroxystyrene.
4. (Currently amended) A precursor as claimed in claim ~~1~~2, wherein the ~~polymeric~~  
~~substance comprises colorant groups~~ colorant compound or moiety is selected from the  
group consisting of triarylmethene dyes, quaternized heterocyclic compounds,  
quinolinium compounds, benzothiazolium compounds, pyridinium compounds,  
polymethine dyes, cyanine dyes, Methylene blue, and a dye having the cation



5. (Original) A precursor as claimed in claim 1, wherein the polymeric substance comprises infra-red absorbing groups.
6. (Original) A precursor as claimed in claim 5, wherein the infra-red absorbing groups are also colorant groups.
7. (Previously amended) A precursor as claimed in claim 1, wherein the imagable coating comprises a free infra-red absorbing compound.
8. (Cancelled)
9. (Previously amended) A precursor as claimed in claim 1, wherein the reversible insolubilizer groups are also colorant groups.
10. (Cancelled)
11. (Currently amended) A precursor as claimed in claim 1, wherein the ~~polymeric substance comprises colorant groups, and which colorant groups~~ also act as infra-red absorbing groups, and ~~which also act as~~ reversible insolubilizer groups.
12. (Previously amended) A precursor as claimed in claim 11, wherein the colorant groups are polymethine dyes or cyanine dyes.
13. (Previously amended) A precursor as claimed in claim 1, wherein the imagable coating comprises a free compound which acts as a reversible insolubilizer compound.
14. (Previously amended) A precursor as claimed in claim 13, wherein the free reversible insolubilizer compound is selected from the group consisting of naphthoflavone, 2,3-diphenyl-1-indeneone, flavone, flavanone, xanthone, benzophenone, N-(4-bromobutyl) phthalimide and phenanthrenequinone.
15. (Previously amended) A precursor as claimed in claim 1, wherein the imagable coating comprises a pigment.

16. (Original) A precursor as claimed in claim 15, wherein the pigment is carbon black, lamp black, furnace black, channel black, iron (III) oxide, manganese oxide, Milori Blue, Paris Blue, Prussian Blue, Heliogen Green or Nigrosine Base NG1.
17. (Currently amended) A method of preparing a lithographic printing form precursor having an imagable coating on an aluminum support, the method comprising the steps of:
- a) anodizing an aluminum support; ~~and~~
  - b) without having effected a chemical treatment step after the anodizing step, applying a composition comprising a polymeric substance having pendent colorant groups and reversible insolubilizer groups to the anodized surface of the aluminum ~~sheet~~ support; and
  - c) drying the composition to form the an imagable coating thereon on the anodized surface, wherein the imagable coating comprises a polymeric substance comprising colorant groups, and reversible insolubilizer groups selected from the group consisting of O-SO<sub>2</sub>-tolyl, O-dansyl, O-SO<sub>2</sub>-thienyl, O-SO<sub>2</sub>-naphthyl and O-CO-Ph and diazide functional groups, and wherein the coating does not comprise a free colorant dye.
18. (Cancelled)
19. (Cancelled)
20. (Cancelled)
21. (Cancelled)
22. (Currently amended) A ~~printing form prepared by a method~~ for preparing a printing form comprising the steps of:
- a) anodizing an aluminum support;
  - b) without having effected a chemical treatment step after the anodizing step, applying a composition comprising a polymeric substance having pendent colorant groups and reversible insolubilizer groups to the anodized surface of the aluminum ~~sheet~~ support; and

- c) drying the composition to form an imagable coating ~~thereon on the~~  
anodized surface, wherein ~~the imagable coating comprises a polymeric~~  
~~substance comprising colorant groups, and reversible insolubilizer groups~~  
~~selected from the group consisting of -O-SO<sub>2</sub>-tolyl, -O-dansyl, -O-SO<sub>2</sub>-~~  
~~thienyl, -O-SO<sub>2</sub>-naphthyl and -O-CO-Ph and diazide functional groups,~~  
~~and wherein the coating does not comprise a free colorant dye;~~
- d) e) exposing the coating imagewise, and;
- e) d) removing the exposed regions of the coating using a developer liquid.

23. (Currently amended) A printing form prepared from the lithographic ~~print~~ printing form precursor of claim 1.
24. (New) The precursor of claim 1, wherein the reversible insolubilizer groups are selected from the group consisting of -O-SO<sub>2</sub>-tolyl, -O-dansyl, -O-SO<sub>2</sub>-thienyl, -O-SO<sub>2</sub>-naphthyl, -O-CO-Ph, and diazide functional groups.
25. (New) The method of claim 17, further comprising the step of reacting a polymer comprising hydroxyl groups with a colorant compound or moiety, to produce the polymeric substance having pendent colorant groups.
26. (New) The method of claim 17, wherein the reversible insolubilizer groups are selected from the group consisting of -O-SO<sub>2</sub>-tolyl, -O-dansyl, -O-SO<sub>2</sub>-thienyl, -O-SO<sub>2</sub>-naphthyl, -O-CO-Ph, and diazide functional groups.
27. (New) The method of claim 23, further comprising the step of reacting a polymer comprising hydroxyl groups with a colorant compound or moiety, to produce the polymeric substance having pendent colorant groups.
28. (New) The method of claim 23, wherein the reversible insolubilizer groups are selected from the group consisting of -O-SO<sub>2</sub>-tolyl, -O-dansyl, -O-SO<sub>2</sub>-thienyl, -O-SO<sub>2</sub>-naphthyl, -O-CO-Ph, and diazide functional groups.



## REMARKS

The above listed claim amendments along with the following remarks are fully responsive to the Office Action set forth above. After entry of this Amendment, claims 1-7, 9, 11-17, and 22-24 are pending. The Examiner has indicated the allowability of claims 13 and 14.

Claims 1, 2, 4, 11, 17, and 22 are amended. Claims 24-28 are added. No issue of new matter is presented by the claim amendments or the new claims. The Examiner's objections to the claims have been addressed by the present amendments.

The present invention is a lithographic printing form precursor comprising an anodized aluminum support that has not been subjected to a chemical treatment step after anodization, and an imageable coating comprising a polymeric substance having pendent colorant groups and reversible insolubilizer groups. The imageable coating does not include a free colorant dye.

As described in the specification, an aluminum support for a lithographic printing form precursor is often treated by a post-anodic treatment ("PAT"). Commonly employed post-anodic treatments include treatment using a silicate or phosphate composition; page 1, paragraph [0003]. If no PAT is performed on the aluminum support, and if a free colorant dye is employed, then the colorant dye may form an absorbed or residual layer on the anodized surface of the support; page 3, paragraph [0005]. The absorbed or residual layer will remain after development of the lithographic printing form, and will reduce visual color contrast between exposed and unexposed areas of the printing form. *Id.*

The present invention addresses this problem by utilizing an imageable coating comprising polymeric substance having pendent colorant groups. The imageable coating may then be used on an aluminum support that has not been subjected to the chemical treatment step of a PAT.

### Claim Rejections – 35 U.S.C. § 102

The Examiner has rejected claims 1-6, 9, 11, 12, 17, 22 and 23 as anticipated by U.S. Patent 6,124,425 to Nguyen ("Nguyen"). The Examiner states that Nguyen teaches all the

elements of the claimed invention, and specifically refers to Example 18 given at col. 25, lines 43-50.

It is respectfully submitted that the reference cited by the Examiner does not provide all the elements of the present invention as claimed. In Example 18 of Nguyen, a coating solution was spin-coated onto an electrolytic grained aluminum substrate, which was reported to be treated with polyvinyl phosphoric acid. It is respectfully submitted that the Nguyen specification has erroneously substituted the name "polyvinyl phosphoric acid" for "polyvinyl phosphonic acid," which is commonly used in the art of lithographic printing for post-anodic treatment.

The present invention requires that the anodized aluminum support is anodized but not subsequently subjected to a chemical treatment step. This feature of the invention is recited in each of the independent claims. In the cited example from Nguyen, treatment with polyvinyl phosphoric acid (sic) falls within the present definition of a post-anodic chemical treatment step. Treatment with polyvinyl phosphoric acid (sic) is *not* an anodization step. Therefore, the Nguyen reference cannot anticipate the present invention. Withdrawal of the rejection is requested.

#### **Claim Rejections – 35 U.S.C. § 103**

The Examiner has rejected claims 7, 15, and 16 as unpatentable over Nguyen in view of U.S. Patent 6,074,797 to Suezawa, *et al.* ("Suezawa"), with U.S. Patent 6,447,895 to Kamir, *et al.* and U.S. Patent 6,170,292 to Boulos, *et al.* cited in support. The Examiner states that Nguyen teaches all the limitations of claims 7, 15, and 16, except for the inclusion of a pigment or an infrared-absorbing compound.

As discussed above, Nguyen cannot anticipate the claims from which claims 7, 15, and 16 depend. Furthermore, the combination of Nguyen and Suezawa does not teach or suggest using an anodized aluminum support that has been anodized but not subsequently subjected to a chemical treatment step. The present invention permits the manufacture of a lithographic printing form precursor without a post-anodic chemical treatment step. A printing form precursor can therefore be manufactured more efficiently, and with reduced usage of consumable resources. The references cited by the Examiner do not provide these

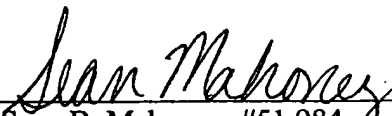
advantages. Therefore, the combination of references cited by the Examiner cannot render the claimed invention obvious. Withdrawal of the rejection is respectfully requested.

**Conclusion**

All pending claims are now in condition for allowance. A notice to that effect is respectfully requested.

Respectfully Submitted,

GEOFFREY HORNE et al.

By:   
Sean B. Mahoney, #51,984  
FAEGRE & BENSON LLP  
2200 Wells Fargo Center  
90 South Seventh Street  
Minneapolis, MN 55402-3901  
612/766-6845

Dated: April 28, 2003

M2:20529831.01

Serial No.: 09/828,075